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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/697,789	10/26/2000	Graham Mensa-Wilmot	05516/084001	5600

22511 7590 06/18/2003

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HOUSTON, TX 77010

EXAMINER

GAY, JENNIFER HAWKINS

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

09/697,786

Applicant(s)

ABE ET AL.

Examiner

Jennifer H Gay

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>13</u> . | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5 and 8 are considered indefinite because in lines 8 and 9 respectively the claims recite the following, "that portion of a thickness of the diamond table which does not extend past the outer surface," however the diamond table was not previously recited as extending past the outer surface of the blade. Correction and clarification are required.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5, 7, 8, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tibbitts et al. (US 6,006,846) in view of Tomlinson et al. (US 4,787,466).

*Regarding claims 5, 8, and 11:* Tibbitts et al. discloses a drill bit with the following features:

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- A main body (210) with a plurality of blades (302 and 304).
- A plurality of cutting elements (110) mounted on the blades.
- The cutting elements including a mounting pad (the blades themselves are considered the mounting pad), substrate (see Figure 2), and a diamond table (see Figure 2 and col. 7, lines 20-30).

Tibbitts et al. discloses all of the limitations of the above claims except for the mounting pad including a relief groove that extends back from the outer surface of the blade at least 40 percent of the portion of the thickness of the diamond table that does not extend past the outer surface of the blade. As seen in Figure 2A, Tomlinson et al. discloses a cutting element that includes a mounting pad (10), a substrate (26), and a diamond table (24). A relief groove (32) is formed in the mounting pad and extends back from the outer surface of the blade at least 40 percent of the portion of the thickness of the diamond table that does not extend past the outer surface of the mounting pad. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the relief groove of Tomlinson et al. in the mounting pad of Tibbitts et al. in order to have minimized heat damage to the cutting element when attaching the element to the mounting pad (see col. 2, lines 34-50).

*Regarding claims 7 and 10:* Tibbitts et al. and Tomlinson et al. disclose all of the limitations of the above claims except for the relief groove having a depth of 0.025 inches. However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the relief groove of Tibbitts et al. in view of Tomlinson et al. with a depth of 0.025 inches, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

*Further regarding claim 11:* Neither Tibbitts et al. nor Tomlinson et al. teach that the bit body is formed by machining a bit body blank, however, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

6. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tibbitts et al. (US 6,006,846) in view of Tomlinson et al. (US 4,787,466) as applied to claims 5 and 8 above, and further in view of Butcher (US 6,220,117).

Tibbitts et al. and Tomlinson et al. disclose all of the limitations of the above claims except for forming the bit body from powered tungsten carbide infiltrated by a binder alloy. Butcher teaches a method of forming a drill bit. The drill bit is formed from a powered metal, tungsten carbide for example, that is infiltrated by a binder alloy. (See col. 3, line 25-col. 3, line 47). It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the drill bit body of Tibbitts et al. in view of Tomlinson et al. from powered tungsten carbide infiltrated by a binder alloy as taught by Butcher in order to have provided a drill bit that exhibited a relatively high strength compared to conventional drill bits (see col. 2, lines 43-47).

### ***Response to Arguments***

7. In response to applicant's argument that the space between elements 53 and 32 that the examiner has referred to as the "relief groove" of Deane et al. is not located within the mounting pad, the examiner agrees. Therefore, the finality of the last Office Action has been withdrawn and the rejection of the claims changed accordingly.

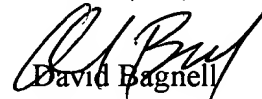
### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and (703) 305-7687 for After Final communications.


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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.



David Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

JHG

  
June 12, 2003